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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,270	10/22/2003	Yuichi Shimizu	117243	4556

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EXAMINER
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TON, MINH TOAN T

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/690,270

Applicant(s)

SHIMIZU ET AL.

Examiner

Toan Ton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 August 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-21 is/are pending in the application.  
4a) Of the above claim(s) 9-17, 19 and 20 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-8, 18 and 21 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 5, 8 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Song et al (US 6781651).

Song discloses an electro-optical device comprising (see at least Figure 1 and its detailed descriptions): a substrate; data lines 62 extending in a first direction; scanning lines 22 extending in a second direction and intersecting the data lines; pixel electrodes 82 and thin film transistors disposed so as to correspond to intersection regions of the data lines and the scanning lines; storage capacitors electrically connected to the thin film transistors and the pixel electrodes (see at least col. 3, lines 59-64); shielding layers (90, 92) disposed between the data lines and the pixel electrodes, nitride films (see at least col. 3, lines 24-25) being included in the shielding layers and are formed along the data lines and being wider than the data lines.

Song discloses interlayer-insulating films (e.g., 100, 82) arranged as bases of the pixel electrodes (see at least Figures 1-2).

Song discloses relay layers (see at least col. 3, lines 60-67) being electrically connected to the pixel electrodes and one of a pair of electrodes, which constitute each of the storage capacitors.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 7 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song as applied to claims 1-2, 5, 8 and 21 above.

Overlapping the bus (gate/data) line with the pixel electrode in the LCD art is common and known for achieving advantages such as capacitance effect, high aperture ratio. Therefore, it would have been at least obvious to one of ordinary skill in the art to employ the data line so as producing a storage capacitor for advantages such as capacitance effect, high aperture ratio. Further, forming of the same material achieves advantages such as cost-reduction, as a common goal in the art.

It is known and a common goal in the art to minimize manufacturing steps (e.g., forming simultaneously, forming of the same material), thus resulting in advantages such as cost-reduction. Forming the relay layers of the same material as the shielding layer achieves advantages such as cost-reduction, as a common goal in the art. Therefore, it would have been at least obvious to one having ordinary skill in the art to employ the relay layer of the same material as the shielding layer for achieving advantages such as cost-reduction, as a common goal in the art. Further, alternative materials for the shielding layer such as a transparent

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conductive film are obvious variations (i.e., not patentably distinct) to one of ordinary skill in the art.

5. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song as applied to claims 3, 7 and 18 above, and further in view of Yang (US 5429962) and Ellis (5546204).

Song discloses the data line formed as a double-layered structure (one layer is formed with a material having a lower resistance, the other with a material having a good contact characteristic with other materials) [see at least col. 4, lines 27-31].

Yang discloses an active matrix LCD device comprising a data line formed of polysilicon and a metal layer (commonly, e.g., Al, Cr, Mo) for achieving advantages such as minimizing breakage of the data line. Ellis discloses an active matrix LCD device comprising data line constructed of a strip of refractory metal laid on top of a layer of polysilicon for achieving advantages such as achieving low resistance. Therefore, it would have been obvious to one of ordinary skill in the art to employ data line comprising polysilicon and metal layer (e.g., commonly Al, Cr, Mo.) for achieving advantages such as minimizing breakage of the data line, low resistance. Further, forming the relay layer of the same material as the data line achieves advantages such as cost-reduction, as a common goal in the art.

### ***Response to Arguments***

6. Applicant's arguments filed 08/31/05 have been fully considered but they are not persuasive.

Applicant's arguments are as follows:

(1) Song fails to disclose a shielding layer disposed between the data line and the pixel electrode.

(2) Song fails to disclose a relay layer and contact holes.

Examiner's responses to Applicant's arguments are as follows:

(1) Song discloses a shielding layer having portion(s) disposed between the data line and the pixel electrode (see at least Figure 1).

(2) Song discloses relay layer(s) and contact holes (see at least Figure 2).

***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

***Contact Information***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan Ton whose telephone number is (571) 272-2303.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

November 11, 2005

  
TOAN TON  
PRIMARY EXAMINER